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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WON, BUMSUK	

ART UNIT	PAPER NUMBER
2889	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/814,294	THURK, PAUL	
	Examiner	Art Unit	
	Bumsuk Won	2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *42,62-66 and 84-96* is/are pending in the application.

4a) Of the above claim(s) *84-96* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *42, 62-66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

/TOAN TON/

DETAILED ACTION

Response to Amendment

The amendment filed on 1/31/2008 has been entered.

Election/Restrictions

This application contains claims directed to the following patentably distinct species:

- Species I, drawn to first embodiment having a generic method of making a subassembly for a light emitting panel having a specific material and structure of semiconductor group IV nanoparticles.
- Species II, drawn to second embodiment having a generic method of making a subassembly for a light emitting panel having a semiconductor group IV nanoparticles with specific structure of the light emitting layer including electroluminescent layer as well as photoluminescent layer that are independent from using the specific material and structure of the nanoparticles themselves.

The species are independent or distinct because claims to the different species recite the mutually exclusive characteristics of such species. In addition, these species are not obvious variants of each other based on the current record.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, at least claim 42 appears generic.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

The election of the species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to

petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

Newly submitted claims 91-96 are directed to an invention that is independent or distinct from the invention originally claimed for following reasons:

Claims 42 and 62-66 are related to a generic method of making a subassembly for a light emitting panel having a specific material and structure of semiconductor group IV nanoparticles, whereas the newly submitted claims 91-96 are directed to a generic method of making a subassembly for a light emitting

panel having a semiconductor group IV nanoparticles with specific structure of the light emitting layer including electroluminescent layer as well as photoluminescent layer that are independent from using the specific material and structure of the nanoparticles themselves. Therefore, the examiner will examine claims 42 and 62-66.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 91-96 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

Applicant's arguments with respect to the amended claims 42 and 62-66 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dutta (US 2003/0047816) in view of Mikhael (US 2003/0080677), in further view of Duggal (US 2003/0094626).

Regarding claim 42, Dutta discloses a method of making a light emitting subassembly (figure 5) comprising combining a light emitting layer (51) comprising light emitting group IV nanoparticles (paragraph 82), first electrode layer (52, 58), second electrode layer (56, 57), and first insulation layer (55), wherein the light emitting layer and the electrode layers are formed on the first insulation layer, and wherein the light emitting layer is formed on the first electrode layer by printing an ink comprising the light emitting group IV nanoparticles, a binder and a solvent onto the first electrode layer (paragraph 35 and 61).

Dutta does not disclose the first insulation layer and the first electrode being transparent, a second insulation layer, and the light emitting layer is a non continuous layer comprising separated domains of red, green, and blue light emitting nanoparticles.

Mikhael discloses a method of making a light emitting subassembly (figure 2) having a transparent first insulation layer and a transparent electrode (paragraph

26), and a second insulation layer (44), for the purpose of protecting the light emitting subassembly.

Duggal discloses a method of making a light emitting subassembly (figures 8 and 9) having light emitting layers (140, 141, 142, 143, R, G, B) being a non continuous layer having separated domains of red, green, and blue light emitting nanoparticles (paragraph 48), for the purpose of emitting a large area white light (paragraph 48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first insulation layer being transparent and a second insulation layer as disclosed by Mikhael, and to have light emitting layer being a non continuous layer comprising separated domains of red, green, and blue light emitting nanoparticles as disclosed by Duggal in the method disclosed by Dutta, for the purpose of protecting the light emitting subassembly.

Claims 62-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutta in view of Mikhael, in further view of Duggal, in further view of Korgel (US 6,918,946).

Regarding claim 62, Dutta in view of Mikhael and Duggal discloses all the claim limitation except for the nanoparticles being Si nanoparticles.

Korgel discloses a method of making a light emitting subassembly having light emitting layer being Si nanoparticles (paragraph 105), for the purpose of enhancing light emissivity.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to having Si nanoparticles for a light emitting layer as disclosed by Korgel in the method disclosed by Dutta in view of Mikhael and Duggal, for the purpose of enhancing light emissivity.

Regarding claims 65 and 66, Korgel discloses the group IV nanoparticles are core-shell nanoparticles comprising silicon (paragraph 105). The reason for combining is the same as for claim 62 above.

Regarding claim 63, Korgel discloses the group IV nanoparticles are Ge nanoparticles (paragraph 126). The reason for combining is the same as for claim 62 above.

Regarding claim 64, Korgel discloses the group IV nanoparticles are Si-Ge alloy nanoparticles (paragraph 118). The reason for combining is the same as for claim 62 above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bumsuk Won whose telephone number is 571-

272-2713. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on 571-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bumsuk Won/
Examiner, Art Unit 2889

/TOAN TON/
Supervisory Patent Examiner, Art Unit 2889